ABSTRACT

1   A mechanism for maintaining the first-in first-out order of commands in a

2   multiple-input and multiple-output buffer structure includes a command number

3   generator for generating and assigning a command number to each command entering the

4   buffer structure, and a command number comparator for comparing the command

5   number of the outgoing command at each buffer in the buffer structure to determine

6   which command should exit. Both command number generator and command comparator

7   have a cyclic counter that has a period greater than or equal to the total number of

8   allowable buffer entries in the buffer structure. For maintaining order of posted and non-

9   posted command queues, a pending posted write counter is used in the posted command

10   queue to record the number of pending posted write command and each entry in the non-

11   posted command queue is associated with a dependency counter.

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